

5 Questions To Determine The Static Mixer You Need



Having the right [static mixer](#) can make all the difference when it comes to production value and durability. Static mixers are used to mix two materials into one flowing, homogeneous adhesive material. These mixers provide a much greater degree of control when mixing and dispensing the materials, which, in turn, produces less wasted material, saving you money on both production and material costs.

Check out our [Static Mixer Finder Tool](#) to Help Pick the Perfect Static Mixer

Gluegun.com offers an extensive selection of static mixers and accessories, all with the purpose of providing you with the best quality product, the best results, and the most affordable price. But how do you know what kind of mixer you need for your specific project?

Determining the right static mixer is vital to the outcome of your project. You will know you are using an appropriate mixer if your materials are properly mixed and have the desired flow rate and pressure drop. Improperly mixed materials appear striated due to the fact that they have not been properly mixed, resulting in a sloppy material surface and a slow set time. But how do you know what mixer will work best with the materials you need? To help you narrow down your choices from our large selection, we recommend you start by answering these five questions regarding each specific feature of the mixer you need.

What is the dispensing method?

How you need to have your materials dispensed is a big factor in determining which mixer will work best for you. The materials you are using will help to determine your mixer based on the pressure limitation of the nozzle, the acceptable back-pressure/retained volume, and the expected, or desired flow rate.

Cartridge applications automatically limit the volume you can work with, so retained volume will play an important role in your determination. This means you will also need to be comfortable handling back-pressure, unless you are using a pneumatic dispenser, in which this is less of an issue. Meter Mix machine applications can be used when mixing larger amounts of material. This also makes retained volume less of an issue owing to the larger size of the mixer.

- [Our most popular 50mil bayonet static mixer](#)
- [Our most popular meter mix machine static mixer](#)

What materials are you trying to mix?

The materials you are mixing directly determine the range of elements needed to mix the materials into a homogeneous material. Some materials are considerably more difficult to mix than others, so it is crucial that you have the appropriate amount of elements in your mixer to get the mix you need.

Some common materials you will likely be working with include acrylic, epoxy, polysulfide, PU foam, silicone, and urethane. Typically, the element range needed for each of these separate materials is as follows:

Material	Range of Elements
Acrylic	8-20 elements
Epoxy	15-24 elements
Polysulfide	24-32 elements
PU Foam	10-24 elements
Silicone	20-30 elements
Urethane	24-36 elements

There are two factors that can indicate you should use a number towards the higher range. The first is the viscosity of the materials; if the two elements have very different viscosities (ie. material A is 5,000cps and material B is 150,000cps), you will likely need to use the higher number of elements. The second is the material ratio; if you are dealing with a mixing ratio of 7:1, for example, a higher number of elements will be needed to achieve a pure, homogenous mix.

What is the viscosity of the materials being mixed, and what flow rate would you like to achieve?

Knowing the viscosity of the materials you need to have mixed also helps you determine the diameter of the elements you need to use. The thinner the materials you are working with, the smaller the diameter is required in order to get a proper mix. That said, thicker

materials require a larger diameter in order to achieve the same degree of homogeneous mix. Follow the chart below to determine the diameter range of the mixer you will need.

Viscosity Range	Mixing Element Diameter Range
Thin (< 5,000cps)	0.093” – 0.25” (2.36 – 6.35mm)
Medium (5,000 – 50,000cps)	0.212” – 0.314 (5.4 – 8mm)
Thick (>50,000cps)	>0.366” (9.3mm)

What will you attach the mixer to?

This question will help you determine what connection style/inlet you will use with your mixer. There are three main connection types: bayonet, bell, and integral nut (threaded). Bayonet mixers feature a simple twist-and-lock system, and are recommended for 9-50mL cartridges. Bell mixers come in a slightly larger variety, with options for round, square, and rotary connections. Typically bell mixers are used for 200mL cartridges, or larger. Inline, or threaded mixers, are also for larger cartridge sizes, but do not require the use of a retaining nut.

How, or into what, do you want to apply the material?

Your purpose, or application for using a static mixer is the last step in determining what kind of mixer outlet you need for your specific project, or business. Please note, if you are not using a cartridge application, this question is irrelevant. You can use the chart below to help you determine the appropriate mixer outlet needed for your project.

Material Application	Mixer Outlet
Increase onsite output	Stepped Outlet (for 8mm, 3/8”, or 1/2” bell mixers)
Small bead	Slip Luer Outlet (for 3/16”, 1/4” bell and bayonet mixers)
Spread out w/ Pro-Tip accessories	A Detail Outlet (for specific bead outlet-end can be snapped off)
Precise Placement w/ needle-tip accessories	Luer Lok, or Rotating Luer Lok Outlet (for precise placement when using a needle-tip)
Hole extension	Extension Outlet (for reaching through holes (ie. anchoring))
Maximum output	Full Bore Outlet (for maximum material output)
Through tubing at end of mixer	Barbed Outlet (for attaching tubing at end of mixer)
Precise placement w/ needle tip and jacket	H-tapered, or Snap Hub Outlet